

## DECISION NOTICE

### Bison Vaccination

The Montana Department of Livestock (DOL) prepared an Environmental Assessment (EA) to review the impacts to the human environment associated with a proposal to vaccinate bison calves and yearlings in the Western Boundary Area, consistent with the adaptive management steps as described in the Interagency Bison Management Plan (IBMP). This Decision Notice summarizes the proposal and the final decision. A description of the issues expressed by the public review of the draft EA and DOL's responses are attached as Appendix A.

#### Proposal

The IBMP was approved in 2000. The IBMP provides a framework to manage both bison and the risk of transmission of brucellosis from bison to domestic livestock. The IBMP emphasizes measures to maintain temporal and spatial separation between bison and cattle. The IBMP also anticipated that vaccination of bison would be incorporated as a strategy to reduce the prevalence of brucellosis within the bison herd and to reduce the risk of transmission from bison to cattle. Within the adaptive management framework, the plan specified that vaccination would be implemented incrementally. Initially, vaccination would begin when it was determined that a safe vaccine was available. At this time, DOL proposes to initiate vaccination of seronegative bison calves and yearlings that had been captured in the Western Boundary Area by injection with *Brucella abortus* strain RB51 (RB51) vaccine.

An EA that assessed the impacts of the proposed bison vaccination was offered for public review on December 3, 2004. The EA evaluated two action alternatives:

**1. No action.** Under this alternative, bison management in the Western Boundary Area would continue under the provisions of the IBMP. The DOL would defer the decision to incorporate bison vaccination into the plan for the Western Boundary Area, pending the results of additional research regarding vaccines suitable for use in bison.

**2. Vaccinate seronegative bison calves and yearlings in the Western Boundary Area (Proposed Action).** Under this alternative, DOL would vaccinate bison calves and yearlings, consistent with the adaptive management steps for the Western Boundary Area, as described in the IBMP. Vaccination eligible bison include bison that meet all of the following criteria: 1) calves (4 to 12 months of age) and yearlings (12 to 24 months of age); 2) captured as a result of other management actions to manage bison numbers and distribution in the Western Boundary Area; 3) tested to determine that the bison are seronegative for brucellosis; and, 4) otherwise eligible for live release because bison numbers do not exceed the population objective for the respective management area or the population does not exceed the population target of 3,000 for the whole bison herd.

When the population exceeds the defined objective for the Western Boundary Area (100 seronegative bison) or for the target for the whole bison herd, the DOL may exercise discretion in determining whether to vaccinate and release otherwise eligible bison.

Vaccination will occur opportunistically, as an incidental activity to normal bison management activities. Capture operations will continue at the level required to maintain bison numbers and distribution in the Western Boundary Area, as defined by the IBMP. The Department does not propose additional capture operations specifically for the purpose of increasing the number of bison available for vaccination.

The EA also identified four additional alternatives that, for reasons explained in the EA, were not analyzed further. These included: 1) Vaccination of bison calves and yearlings according to a research protocol; 2) Vaccinate only female calves and yearlings; 3) Vaccinate with Strain 19; and, 4) Initiate remote vaccination.

### **Public Process and Comment**

The EA was offered for public review on December 3, 2004. DOL requested that comments be submitted by January 5, 2005. DOL published a copy of the EA on its website and provided opportunity for people to submit comments electronically, as an alternative to mailing written comments. DOL also scheduled two public hearings, the first in Bozeman on December 14 and the second in Helena on December 15.

DOL received 66 comments in response to the Environmental Assessment and 13 people attended the two public hearings. In addition to the oral testimony, 2 written comments were submitted during the hearing. In addition to individual comments, responses were received on behalf of the following organizations:

Montana Stockgrowers Association  
Montana Wool Growers Association  
Greater Yellowstone Coalition  
Buffalo Field Campaign  
Humane Society of the United States  
National Wildlife Federation  
Montana Wildlife Federation  
Gallatin Wildlife Association  
Voices of America  
HOBNOB

DOL compiled a comprehensive list of all substantive comments. The comments and DOL responses are presented in Appendix A. Even though many of the comments are outside the scope of the EA, DOL prepared an appropriate response to all comments that were germane to the broader issue of the IBMP. In doing so, our purpose is to help direct concerned citizens to sources and references that will improve understanding of the IBMP and its relationship to the proposal to vaccinate bison calves and yearlings.

## Final Decision

Based on the analysis in the EA and the comments received, it is DOL's decision to authorize vaccination of bison calves and yearlings in the Western Boundary Area, as described under the proposed action.

DOL has determined that the EA adequately identified and analyzed issues pertinent to the proposed action. Therefore, additional environmental review is not required.

Based on the analysis in the EA and the applicable laws, regulations and policies, DOL has determined that this action will not have a significant effect on the human environment. Therefore, the EA is the appropriate level of review and an environmental impact statement will not be prepared.

The EA, this Decision Notice and the response to public comment may be viewed at the Montana Department of Livestock at the Scott Hart Building, 301 N. Roberts, Helena, MT; or may be obtained by submitting a written request to DOL at PO Box 202001, Helena, MT, 59620-2001. An electronic copy of the EA, Decision Notice and response to comment also may be obtained from DOL's website at [www.liv.state.mt.us](http://www.liv.state.mt.us).

A handwritten signature in black ink that reads "Marc Bridges". The signature is fluid and cursive, with the first name "Marc" and last name "Bridges" clearly legible.

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Marc Bridges  
Executive Officer  
Montana Department of Livestock

February 4, 2005

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Date

## **Appendix A. Substantive Comments to the Bison Vaccination EA, including DOL responses to comments**

### **Vaccination, Vaccine Safety and Vaccine Efficacy**

Comment: Information presented in the EA suggests that RB51 is not safe for use in bison and is not safe for non-target species.

Response: The EA included the GYIBC protocol for determining the safety and efficacy of vaccines. The EA also included a synopsis of the various studies that have evaluated the safety and efficacy of RB51. Based on the protocol and those studies, DOL and the other agencies that cooperate in the IBMP have determined that RB51 is safe for use in bison and safe for the non-target species that occur in association with bison.

Comment: The studies that DOL relied on to demonstrate the safety of the RB51 vaccines all involved bison calves that originated from brucellosis-free herds. The reality is that no research has been undertaken to evaluate the safety of RB51 in bison calves that originate from a bison population with endemic exposure to the bacteria. It is simply naive to think that the endemic nature of the bacteria in Yellowstone's bison may not affect both the safety and efficacy of RB51 if administered to these animals.

Response: DOL is not aware of any credible information to indicate that RB51 would behave differently in bison from Yellowstone National Park as compared with bison from other herds.

Comment: I request that you release more scientific information on the effects of RB51 for non-target species. If a wild animal or bird is weakened or sickened from feeding on vaccinated bison calves, that animal's chances of surviving in the wild is undermined.

Response: The EA referenced all of the recent studies that evaluated the risk of RB51 to non-target species. Based on that information, DOL and the other agencies that cooperate in the IBMP have determined that RB51 is safe for use for non-target species. Moreover, it is unlikely that the effects of RB51 on scavengers would differ from the effects of field strain *Brucella* on those same species. Brucellosis has been prevalent in this bison herd for nearly a century and no detrimental affects related to brucellosis in scavenger species have been detected during that period.

Comment: Moose, mule deer, bighorn sheep, pronghorn, and coyote were exposed to RB51 and developed infections, and this is quoted in your own EA. What long-term effect will these "infections" have on this wildlife?

Response: RB51 is a modified live vaccine. Infection, in response to vaccination, is a predictable reaction. The EA noted that infections occurred in moose, mule deer, bighorn sheep, pronghorn and coyote. The EA also noted that RB51 did not cause morbidity or mortality in those species. Brucellosis has been prevalent in this bison herd for nearly a

century and no detrimental affects related to brucellosis in scavenger species have been detected during that period.

Comment: There is considerable debate in the scientific community surrounding the efficacy of RB51 for protection against infection and abortion in bison. There is currently no sound scientific evidence that provides any confidence that a field-based vaccination program would benefit wildlife and/or livestock. The bison have different genetics and this serum will not work on them.

Response: The EA summarized the studies on the efficacy of RB51. As noted in the EA, the studies have demonstrated that RB51 is an effective vaccine in cattle but the efficacy studies in bison have been less conclusive. Based on the studies referenced in the EA, DOL has concluded that it is uncertain whether RB51 will significantly reduce infection rates in vaccinated bison. However, it is likely that vaccinated bison that become infected will shed fewer *Brucella* organisms, thus, reducing the potential for vaccinated bison to transmit brucellosis to susceptible bison.

Comment: The IBMP states that vaccination will not be used until a 'safe and effective' vaccine is available. The EA ignores the agreed upon criteria in the IBMP for proceeding with such a plan.

Response: The EA explained that, within the adaptive management framework, the decision to initiate vaccination of bison in the Western Boundary Area capture facilities would begin when it is determined that a vaccine that is safe for use in bison and safe for non-target species is available. Subsequent decisions to initiate remote vaccination are contingent upon the development of a safe and effective system for vaccine delivery. The agencies have determined that RB51 is safe for use in bison and is safe for non-target species. The rationale for that determination was explained in the EA.

Comment: The expected results do not seem very promising - a reduction of exposure rates from 45 percent to around 30 percent after 15 years of the program.

Response: The EA explained that vaccination would not result in the elimination of brucellosis in this bison herd. Moreover, the IBMP is not intended to be a brucellosis eradication plan, but rather is a plan for the management of bison, intended to prevent the transmission of brucellosis from bison to cattle. A reduction in exposure rates over time is consistent with that purpose.

Comment: RB51 is not effective in preventing either miscarriage or infection in buffalo. Based on the rarity of brucellosis-related abortions and the low rate of actual brucellosis infection in Yellowstone buffalo, how effective will the vaccine actually be in reducing the risk of brucellosis transmission?

Response: The EA explained that this bison herd is infected with brucellosis; that the mechanisms of brucellosis transmission in infected Yellowstone bison are similar to that observed in infected cattle; and, that consistently, from 35% to 50% of those bison that have

been sampled, test positive for the presence of antibodies to *Brucella*. These characteristics are similar to what might be expected in a cattle herd that is chronically affected with brucellosis. Vaccination alone is rarely sufficient to eliminate brucellosis in chronically infected cattle herds. Rather, vaccination is typically used in combination with aggressive testing and removal of reactors.

The EA also explained that it would take a period of time following implementation of a vaccination program before a reduction in disease prevalence would become noticeable. Vaccination of bison calves and yearlings, in combination with the capture, testing and removal of seropositive bison in the Western Boundary Area likely will result in the reduced prevalence of brucellosis in the overall herd. It is not possible to quantify the expected reduction in the risk of brucellosis transmission associated with the anticipated reduced prevalence.

Comment: DOL should consider the recommendations of qualified veterinarians who are well qualified to make the decisions on which bison might be eligible for vaccination and whether RB51 vaccine would be safe for use in bison.

Response: The analysis in the EA was based on recent, published information and those sources were referenced. The EA also noted the agencies that were consulted.

Comment: The EA confirms that vaccination will not replace the need for temporal and spatial separation of bison and cattle, nor will it achieve eradication of brucellosis from this bison herd.

Response: DOL agrees.

Comment: Who will benefit from the vaccination program? How will bison benefit from vaccination? They rarely suffer the consequences of brucellosis.

Response: The IBMP is a plan for the management of bison, intended to prevent the transmission of brucellosis from bison to cattle. Vaccination of bison is consistent with that purpose. The benefits of bison management, including vaccination, were evaluated in the FEIS.

Comment: Vaccination is unnecessary because the only time that wild bison leave Yellowstone National Park is during the winter when there are no cattle outside the Park.

Response: Vaccination is one component within the IBMP that is intended to prevent the transmission of brucellosis from bison to cattle. Moreover, bison have been documented exiting the park during every month of the year.

Comment: The EA does not discuss the efficacy or impacts of vaccinating newly born bison within hours, days or weeks of birth. Neither does the EA address the impact of capturing newborn calves, vaccinating them, and releasing them without their mothers.

Response: The EA explained that vaccination eligible bison include bison that are calves (4 to 12 months of age) and yearlings (12 to 24 months of age). Newborn calves are not included in the definition of vaccination eligible bison. Moreover, the protocol for capturing bison in the Western Boundary Area includes efforts to exclude cows with newborn calves.

Comment: Given current technology, the protocol for evaluating the effectiveness of vaccination is insufficient.

Response: The EA acknowledged that definitive conclusions regarding efficacy may not be drawn when comparing results from different efficacy studies. Sample size, experimental design and methodology differ among studies and may affect the interpretation of the results.

Comment: We encourage the agencies to research the development of an effective oral bait vaccination system.

Response: DOL concurs, however development of an effective oral bait vaccination system is outside the scope of this EA.

Comment: Since a killed-vaccine would pose virtually no risk to the environment if accidentally released compared to the potential impacts associated with the release of a live-vaccine, an alternative evaluating the merits, safety, and efficacy of using a killed-vaccine must, at a minimum, be included in the analysis.

Response: RB51 and Strain 19 are the only vaccines approved by USDA for use in bison. Both are attenuated live vaccines. There are no approved killed-vaccines available.

Comment: If you do proceed with the vaccination of Yellowstone Bison then you need to consider remote vaccination as a way of doing it. The technology is there.

Response: The EA noted that remote vaccination should eventually be incorporated into the IBMP. However, as described in the adaptive management framework, implementation of this step is contingent upon the availability of a safe and effective remote delivery mechanism. Research projects are in progress to evaluate remote delivery mechanisms and vaccines that might be appropriate for remote delivery. Further, the EA explained that DOL is not prepared to initiate an EIS because there is uncertainty whether a remote delivery system, sufficient to achieve the purposes of the IBMP, is available for field application at this time.

Comment: We appreciate that DOL is considering a different approach to bison management.

Response: Comment noted.

Comment: The EA did not evaluate the integration of the various bison vaccination programs. We are against the Montana Department of Livestock working independently of the four other agencies in the vaccination delivery. The implementation of the proposed vaccination program cannot be limited to the decision-making and discretion of the DOL but, rather, must be a joint decision by all of the relevant agencies.

Response: The EA referenced all of the vaccination programs that are under consideration. All are being developed within the overall framework and will be integrated within the IBMP. Moreover, DOL, as noted in the EA, consulted with the cooperating agencies during the preparation of the EA and they concur that a decision to proceed with vaccination of bison calves and yearlings in the Western Boundary Area is consistent with the provisions of the IBMP.

Comment: It is not simply a matter of whether the vaccine is safe and/or efficacious but, rather, it is a question of whether vaccines are appropriate for use in a free-ranging wildlife species that occupies America's foremost national park and whether such a program is consistent with the various legal mandates governing park management.

Response: The IBMP included provisions for incorporating vaccination when a safe vaccine was available. The appropriateness of vaccinating these bison was evaluated in the FEIS for the IBMP.

### **Brucellosis in Bison**

Comment: More research needs to be performed on the epidemiology of brucellosis in Yellowstone bison, including vaccine effectiveness.

Response: DOL agrees. However, a decision to initiate additional research is beyond the scope of this EA. Moreover, the imperative to manage bison based on current information is greater than the imperative to wait for the results of additional research.

Comment: The EA provides no information of bison's natural resistance to disease infection, or what role genetics plays in providing natural immunity to brucellosis. What is the natural immune response capability of Yellowstone bison? Do Yellowstone bison have a genetic characteristic that confers immunity to a portion of the population?

Response: Natural resistance to *Brucella* has been documented in cattle and the allele (SLC11A1) responsible for natural resistance has been identified. Natural resistance is suspected but has not been confirmed in bison. If it occurs, natural resistance probably involves a different gene action and likely a different mechanism than that in cattle. Naturally resistant bison would likely test negative for brucellosis in the field.

Comment: What evidence does the Department have to indicate that Yellowstone bison abort and shed *Brucella* bacteria? What is the level of bacteria of a typical exposure in Yellowstone bison? What is the primary means of exposure between bison in YNP?



Response: *Brucella* induced abortions have been documented in Yellowstone bison in the Greater Yellowstone Area. *Brucella abortus* has been cultured from aborted fetuses, birth sites and associated vegetation. The EA explained that this bison herd is infected with brucellosis; that the mechanisms of brucellosis transmission in infected Yellowstone bison are similar to that observed in infected cattle; and, that consistently, from 35% to 50% of those bison that have been sampled, test positive for the presence of antibodies to *Brucella*. These characteristics indicate that the bison herd is chronically infected with brucellosis. Within chronically infected cattle herds, the primary route of transmission is exposure to *Brucella* organisms that are shed by infected females in association with birth and abortion events. Animals that test positive for brucellosis do so because, at sometime during their lifetime, they incurred an infection that was severe enough to stimulate the production of antibodies to the *Brucella* organism. If 35% to 50% of the herd consistently tests positive for the antibodies, it may reasonably be concluded that the organism is prevalent in the herd and is being maintained through transmission from infected to susceptible bison.

Comment: The test to determine which calves are slaughtered and which are vaccinated is the same serology test that currently dictates the fate of captured buffalo. The test only detects antibodies to brucellosis and not the disease itself.

Response: The standard serological tests detect the presence of antibodies to the *Brucella* organism. Bison that test positive for brucellosis do so because they had a previous or current infection. Animals with brucellosis tend to be infected for life. Animals which test negative for brucellosis are eligible for vaccination because, presumably, they have not developed infection and the vaccine might provide some level of protection against future infection.

Comment: Brucellosis-exposed buffalo can develop their own antibodies and successfully immunize themselves, much like a child exposed to chickenpox does.

Response: The standard serological tests detect the presence of antibodies to the *Brucella* organism. The development of antibodies, in response to the disease organism, is a component of the biological response to *Brucella*. However, with *Brucella* exposure, the immune system is not able to clear all of the organisms and prevent subsequent infection. Infected animals have the potential to shed the organism whenever the infection is active. As such, the presence of antibodies is not equivalent with immunity.

Comment: Based on evidence from culture tests conducted on slaughtered Yellowstone bison that tested positive for exposure to *Brucella* bacteria, it is clear that only a small percentage of the test positive animals were actually infected with *Brucella*.

Response: The EA noted that there is public controversy regarding the potential for brucellosis transmission from bison to cattle. The discrepancy between the frequency of positive serological tests and the frequency of positive culture tests contributes to the controversy. The primary cause for this discrepancy relates to the nature of the disease and the corresponding difficulty of isolating the disease organism from the tissues of an

animal that harbors the organism but is not suffering from an active infection. Bison that have a positive serological test for antibodies to the *Brucella* organism have a previous or current infection and, because infected animals tend to harbor the organism for life, may develop subsequent active infections even though they may not be subsequently exposed to the disease.

Comment: The main focus is to reduce the risk of brucellosis transmission. To date, there has never been a documented case of wild buffalo transmitting brucellosis to domestic cattle. Why is the DOL so insistent in ignoring the best available science?

Response: The best available science clearly indicates bison can transmit *Brucella* to cattle, and transmission has been documented in domestic herds. The EA acknowledged that there is public controversy related to the lack of documented cases and the lack of controlled field studies that are specific to YNP bison. The EA also noted that, while transmission from YNP bison to cattle has not been documented, the purpose of management has been to prevent free association between bison and cattle. Transmission requires association between susceptible animals and either infected animals or the habitat recently occupied by infected animals. This bison herd is infected with brucellosis and the EA explained that the mechanisms of brucellosis transmission in infected Yellowstone bison herds are similar to that observed in infected cattle herds.

The IBMP is a plan for the management of bison, intended to prevent the transmission of brucellosis from bison to cattle and DOL agrees with that purpose. The Federal FEIS for the IBMP explained the risk of brucellosis transmission from bison to livestock and the potential economic consequences in the event that transmission should occur. There have been cases of transmission between elk and cattle in Wyoming suggesting that the opportunity for transmission from bison is very real as are the economic consequences should such transmission occur.

### **Effects on Bison**

Comment: We firmly believe that the 3,000 population cap on the herd is an arbitrary number that does not have any sound scientific basis; at that number a disease could wipe out the entire herd. The West Yellowstone herd should be allowed to increase in number so its genetic viability is more secure; we therefore oppose any killing, quarantine or any plan that decimates the herd.

Response: Defining population objectives for the Yellowstone bison herd is outside the scope of the EA. The Federal FEIS explained the rationale for the population triggers in the IBMP and for the population objectives in the bison management areas. The FEIS also addressed the issue of genetic viability for this herd. The IBMP describes a variety of management actions that may be taken to reduce population size when the herd exceeds 3,000 bison and/or numbers exceed objectives for the management areas. The IBMP also includes contingencies to increase the population by constraining removals of bison in the event that the population declines to 2,300.

The bison population in Yellowstone is robust and has continued to increase despite periodic removals. The estimate bison population was 2,616 during summer 2000, when the IBMP was approved. Since then, 231 bison have been captured and removed from the Western Boundary Area and 495 bison have been captured and removed from the Northern Boundary Area. The current population estimate is 4,240 bison.

Comment: Keeping the young buffalo in capture facilities is bad enough, as it goes against their nature of free roaming animals and it frightens and hurts them no end.

Response: Capture of bison in the Western Boundary Area is consistent with the provisions of the IBMP and with the definition of free-ranging bison, as it applies to the IBMP. The effects of capturing bison were evaluated in the FEIS for the IBMP. As noted in the EA, vaccination will occur within the framework of current capture operations and DOL does not propose additional capture operations specifically for the purpose of increasing the number of bison available for vaccination.

Comment: Vaccinating wild buffalo drastically degrades their wild character.

Response: The effects of vaccination on the wild character of bison were evaluated in the FEIS for the IBMP.

Comment: Hazing bison drains them of energy that they need for surviving the winters.

Response: The effects of hazing on bison were analyzed in the FEIS for the IBMP.

Comment: Wild bison have occupied the Yellowstone Plateau and the surrounding valleys for thousands of years and are indigenous to Montana. Credible scientists and biologists recognize that bison are ecologically extinct on their native range in Montana. Restoration of wild bison is important ecologically and culturally. Additionally, the bison's presence on the landscape is arguably more ecologically beneficial than importing cattle to the bison's native range.

Response: Restoration of bison to historical range is outside the scope of the EA. To the extent that this issue is relevant to the IBMP, it will be addressed in future environmental reviews related to the distribution of bison that have cleared quarantine.

Comment: The IBMP is preventing natural migrations of Yellowstone's nomadic wild bison herd onto habitat that is arguably needed for their long-term survival. The EA should include information in how allowing natural herd migrations especially during winter, may benefit fitness, health and disease resistance in bison.

Response: Distribution of bison is defined by the IBMP and the effects of managing for that distribution were analyzed in the FEIS for the IBMP.

Comment: Visitors to the Yellowstone area will be none-too pleased with the DOL when they see these wild animals marked with ear tags. Yet these markings will not prevent

the DOL from capturing the same buffalo again - vaccination will not prevent buffalo from being hazed or captured.

Response: Under the current operating procedures for the IBMP, bison that are captured, tested and released in the Western Boundary Area are marked with a metal ear tag. The tag is obscure and not noticeable except on close examination. Bison also are marked with a hair dye and a temporary back tag. The dye remains readily visible through the winter. It is used to identify those animals so that re-capture can be avoided. The mark is temporary and disappears when bison shed their winter coat. No additional markings will be applied to vaccinated bison.

Comment: Yellowstone bison herd, as descendants of the few bison that survived the bison slaughter, are an especially important population and management practices regarding this herd should be carefully considered.

Response: As explained in the FEIS, the purpose of the IBMP is to maintain a wild, free-ranging population of bison and address the risk of brucellosis transmission to protect the economic interest and viability of the livestock industry in the state of Montana. DOL understands that bison management is controversial. But, DOL has determined that current management will achieve the purpose of the IBMP and that conclusion is supported by the analysis in the FEIS.

Comment: Yellowstone is the only place in America where wild buffalo were not exterminated during the 19th century. Today's herd owes its existence to 23 individual buffalo that survived the mass slaughter by taking refuge in the park's remote Pelican Valley.

Response: The FEIS for the IBMP explained the history of this bison herd. The current bison herd descended from an ancestral herd that included a small, remnant population within the park that was augmented with transplants from private bison herds.

Comment: Has the Department conducted any studies to determine the viability of bison calves and yearlings that are released without adult females?

Response: As noted in the EA, vaccination eligible bison include bison that are either calves (4 to 12 months of age) or yearlings (12 to 24 months of age). That definition specifically excludes newborn calves and, under current operations, DOL attempts to avoid capture of cows with young calves at side. Most vaccination will occur during late winter and most calves are born during early spring. Thus, DOL anticipates that few, if any, calves younger than 8 months of age will be vaccinated. Bison of that age are self-sufficient.

Comment: Each bison calf and yearling that is run through the squeeze chute and subsequently tests negative for exposure to brucellosis will then have to be run through the chute a second time. Based on incontrovertible evidence from

capture/test/vaccination operations at the Stephen's Creek facility in YNP, bison run through the chute sustained significant injury and stress.

Response: The effects of handling bison were analyzed in the FEIS for the IBMP.

### **National Brucellosis Program**

Comment: This matter is very serious to the Montana cattle business in Montana. It has taken millions of dollars to get Montana into a classification of brucellosis free. Montana should not take any chances which might remove that status for the state's cattle industry.

Response: As explained in the FEIS, the purpose of the IBMP is to maintain a wild, free-ranging population of bison and address the risk of brucellosis transmission to protect the economic interest and viability of the livestock industry in the state of Montana. One of the objectives of the IBMP is to protect the State of Montana from risk of a reduction in its brucellosis Class Free status. DOL believes that a decision to initiate bison vaccination in the Western Boundary Area is consistent with this purpose.

Comment: It is time that we look at taking the steps necessary to eradicate the potential for transmission. It is a difficult task, but we have to start somewhere and vaccination is a reasonable step in that direction.

Response: As explained in the FEIS, the purpose of the IBMP is to maintain a wild, free-ranging population of bison and address the risk of brucellosis transmission to protect the economic interest and viability of the livestock industry in the state of Montana. The IBMP includes an objective that commits to the eventual elimination of brucellosis in bison and other wildlife. While the actions in the IBMP demonstrate progress in that direction, actually achieving the elimination of brucellosis is not within the scope of the IBMP.

Comment: The EA should provide more information regarding the fact that cattle gave brucellosis to bison in the first place.

Response: This comment is beyond the scope of this EA. The species of *Brucella* (*Brucella abortus*) causing brucellosis that occurs in Yellowstone bison is a livestock disease that originated in Europe and came into this country when cattle were first imported into this country. The original source of infection for Yellowstone bison is unknown. The two most likely sources were either the bison that were transplanted into the Park in the early 1900's and/or dairy cattle that were maintained at the bison ranch in the Lamar Valley.

### **Costs**

Comment: There is no proof that the vaccination is effective, but the proposal will spend thousands and thousands of dollars to vaccinate bison.

Response: The EA disclosed the costs for bison management in the Western Boundary Area. Most of those costs are associated with current management efforts and would be incurred regardless of a decision to begin vaccination. The additional costs for vaccination are almost inconsequential.

Comment: What is the cost-benefit of bison vaccination, including the costs of implementing the entire vaccination program (research, environmental analysis, operations, and follow-up over the ten years of the program) and the benefits (expected reductions in bison management expenditures), tourism revenue due to the presence of free-ranging buffalo in Montana?

Response: The cost-benefit analysis of bison management was analyzed in the federal FEIS for the IBMP.

### **MEPA Compliance**

Comment: The merits and/or environmental impacts of a Yellowstone bison vaccination program have not been adequately considered in any environmental document in violation of NEPA.

Response: The environmental impacts of bison management, including the effects of bison vaccination, were analyzed in the FEIS for the IBMP. The discussion of vaccination in the federal FEIS included criteria for the evaluation of vaccination protocols; definitions of safety and efficacy of vaccines for use in calves and adults; definition of safety for non-target species; and, summaries of recent research. The FEIS included reference to the GYIBC protocol for evaluating safety and efficacy of wildlife vaccines against brucellosis and appropriate for use in the GYA. The analysis of the IBMP in the FEIS presumed that vaccination would be implemented as vaccines that satisfied these criteria became available. Within that broader context, the EA focused specifically on the effects associated with a decision whether vaccination with RB51 in the Western Boundary Area is consistent with the provisions to initiate vaccination, as outlined in the IBMP.

Comment: The agencies are illegally segmenting a full-scale bison vaccination program and other management strategies into small component parts to simplify the environmental review process. By treating each vaccination proposal as a separate issue, the agencies are attempting to avoid the need to evaluate the full range of environmental impacts inherent in a bison vaccination program in a single document.

Response: The IBMP incorporated bison vaccination within an adaptive management framework. The FEIS for the IBMP explained that decisions to actually implement the various vaccination steps would occur incrementally and included commitments to complete additional environmental review, tiered to the FEIS, prior to implementation of those steps.

Comment: The environmental impacts of initiating a bison vaccination program were not disclosed or evaluated in the Final Environmental Impact Statement for bison management published in 2000.

Response: DOL disagrees. Although initial implementation of the IBMP did not include bison vaccination, the IBMP, as analyzed in the FEIS, included an adaptive management framework for the incremental implementation of bison vaccination.

Comment: A comprehensive Environmental Impact Statement must be prepared analyzing, at a minimum, all components of the proposed Yellowstone bison vaccination program.

Response: The FEIS for the IBMP explained that decisions to actually implement the various vaccination steps would occur incrementally and included commitments to complete additional environmental review, tiered to the FEIS, prior to implementation of those steps. The EA reflects DOL's intention to honor that commitment and any decision to implement further vaccination steps, as outlined in the IBMP, will be supported with additional environmental review, as appropriate.

Comment: The EA violates MEPA by failing to justify the purpose and need for the proposed action, failing to consider a reasonable range of alternatives, failing to properly disclose the full range of potential environmental impacts, and by failing to evaluate the cumulative impacts of the proposed action.

Response: The purpose and need for the IBMP was disclosed in the FEIS. Tiered to that purpose, the purpose and need for bison vaccination in the Western Boundary Area was disclosed in the EA.

Comment: MEPA requires state agencies to evaluate the impacts of a reasonable range of alternatives. In this case, DOL only "seriously" evaluated two alternatives – the proposed action and no-action in clear violation of MEPA. The DOL failed to "seriously" evaluate, for example, any alternative that would have proposed the use of another potential vaccine.

Response: DOL's MEPA regulations require EAs to include a description and analysis of reasonable alternatives to a proposed action whenever alternatives are reasonably available and prudent to consider. The principle decision that will be made pursuant to this EA is the determination whether a safe vaccine, appropriate for use in bison, is available and, therefore, whether it is appropriate to initiate bison vaccination in the Western Boundary Area. Within the scope of that decision, DOL is aware that only one vaccine, RB51, satisfies the criteria for safety, as defined by the IBMP. Therefore, DOL determined that consideration of the proposed action relative to a no action alternative was an appropriate level of analysis.

Comment: MEPA requires an analysis of cumulative effects and several changes in bison management are occurring which will have significant adverse impacts on bison,

include the potential use of the Fluorescence Polarization Assay as a new blood test for bison resulting in a significantly larger proportion of bison being unnecessarily sent to slaughter, the initiation of a bison hunt, and the development and operation of a pilot bison quarantine protocol. Each of these proposals, including the vaccination proposal in question here, represents additional potential threats to the bison population. These threats are real, may be significant, and must be disclosed and evaluated as potential cumulative impacts.

Response: The EA referenced all of the recent changes in bison management. All of those changes are occurring within the broader context of the IBMP and the effects were analyzed in the FEIS.

Comment: DOL's regulations implementing MEPA set forth a number of criteria that the agency must consider when determining what level of environmental impact analysis is appropriate for a particular action. In this case, the proposed action meets or exceeds 7 of the 8 criteria clearly requiring the preparation of an EIS.

Response: Based on the analysis in the EA and the applicable laws, regulations and policies, DOL has determined that the decision to vaccinate bison calves and yearlings with RB51 in the Western Boundary Area will not have a significant effect on the human environment. Therefore, the EA is the appropriate level of review and an environmental impact statement will not be prepared. Issues related to this decision that might be considered to be significant already have been evaluated in the FEIS that was prepared for the IBMP.

Comment: Why did the EA not analyze alternatives other than vaccinate or do not vaccinate? The EA should include an analysis of alternative means to achieve the goal of reducing the risk of transmission between bison and cattle.

Response: The decision to vaccinate bison in the Western Boundary Area will be implemented within the framework of the IBMP. Analysis of alternative means to achieve the goal of reducing the risk of brucellosis transmission between bison and cattle were analyzed in the FEIS for the IBMP.

Comment: A frank discussion addressing assumptions about the dynamic of zoonotic disease as related to economics and commerce is long overdue.

Response: The effects of brucellosis as it relates to economics and commerce in Montana were analyzed in the FEIS for the IBMP.

Comment: The narrowness of your assessment and lack of willingness to consider alternative decisions to vaccination - which the IBMP provides to you - demonstrates how far you are from serving a legitimate purpose in proceeding with bison calf vaccination.



Response: As stated in the EA, the decision that will be made is the determination whether a safe vaccine, appropriate for use in bison, is available and, therefore, whether it is appropriate to initiate bison vaccination in the Western Boundary Area, as per the provisions of the IBMP. The scope of the EA is consistent with that decision.

Comment: Develop a new bison management plan.

Response: The IBMP and alternatives to the IBMP were analyzed in the FEIS. A decision to develop a new bison management plan is outside the scope of this EA.

Comment: The EA should evaluate whether an agricultural approach to disease management is appropriate for bison.

Response: Current bison management conforms to the provisions of the IBMP. The effects of the IBMP were analyzed and disclosed in the FEIS.

Comment: All of the agencies were involved in the development of the IBMP. Therefore all of the agencies should be involved in evaluating vaccination.

Response: All aspects of bison management conform to the provisions of the IBMP and are coordinated through an operating agreement and regular meetings among the cooperating agencies. Implementation of a decision to vaccinate bison in the Western Boundary Area would be coordinated in the same manner. DOL is the agency with primary responsibility for management in the Western Boundary Area and, therefore, also is responsible for preparation of the EA. DOL consulted with the cooperating agencies prior to release of the EA for public comment.

Comment: The EA should evaluate vaccination in the larger context of disease management and whether vaccinating bison will achieve the purpose of brucellosis eradication.

Response: The decision to vaccinate bison in the Western Boundary Area will be implemented within the framework of the IBMP. Analysis of the larger context was accomplished in the FEIS for the IBMP.

Comment: The Rathbone Decision (1940) by the Montana Supreme Court ensures that wildlife is a condition of the land, and implies that agricultural interests do not trump wildlife's right to co-exist with agriculture interests. Baldwin indicates that the wildlife belongs to the public and by that virtue places firmly within the Public Trust stewardship of the state, making the state responsible for its well-being. Despite the agreements in IBMP to reduce impacts to private property from wild bison, Baldwin is still applicable.

Response: The statutory authority for implementation of the IBMP was described in the FEIS and current bison management conforms with all applicable federal and state statutes.

## **Cattle Management**

Comment: Are there other programs the DOL could develop that would be more cost-effective in reducing the risk of brucellosis transmission? You could require every cattle farmer within a certain distance from the park to vaccinate their herds. Fencing in cattle and grazing steers instead of cows where buffalo are known to roam. It is far better to remove the cattle from leases of public lands from areas bordering bison habitat. You need to help ranchers make smart common sense decisions on running low risk stock like steers instead of cow/calves that are kept near Bison. Examples include providing incentives/education to prevent, remove or replace the few brucellosis-susceptible livestock that are brought into the area on both private and public lands. Please consider an alternative that allocates approximately 1/6 of the DOL's nearly \$600,000 annual operating budget to establish a voluntary pilot project. Offering above market value compensation to private landowners for grazing leases is an affordable and effective way to ensure brucellosis-proof temporal and spatial separation between wildlife and livestock, thus preventing the opportunity for disease transmission.

Response: Consideration of this proposal is outside the scope of the EA. Current management conforms with provisions of the IBMP. Implementation of some or all of the provisions in this comment would require significant changes in the IBMP and would require corresponding environmental review.

Comment: The EA should have included an analysis of the consequences on bison of a full range of alternatives, including vaccinating only bison, bison and cattle and cattle alone.

Response: Vaccination of bison in the Western Boundary Area will occur within the framework of the IBMP. A full range of alternatives was evaluated in the FEIS that was prepared for the IBMP.

Comment: In the Record of Decision for the management of Yellowstone bison, Montana committed to assuring 100% vaccination of all cattle in the conflict zone. It is unclear from the Environmental Assessment that this is being accomplished. The vaccination of cattle in the conflict area is a critical element of the plan for minimizing the risk of brucellosis transmission.

Response: Cattle producers that operate in the vicinity of the Western Boundary Area are doing so in a manner that conforms to the provisions of the IBMP. Cattle operations in the vicinity of the Northern Boundary Area differ from that which was in effect at the time the IBMP was implemented. DOL and USDA-APHIS are working with those producers to develop herd management plans to ensure that vaccination of those cattle also conforms to the provisions of the IBMP.

Comment: Given the recent outbreaks of brucellosis in the southern end of the ecosystem, an assessment of the effectiveness of the cattle vaccination program is in

order. Have there been any lessons learned regarding the Wyoming brucellosis outbreaks? Is repetitive cattle vaccination necessary to protect against transmission?

Response: DOL agrees that an assessment of lessons learned from the recent incidents in Wyoming would be appropriate. However, that assessment is outside the scope of this EA.

Comment: There are farm subsidies for soybeans, milk and just about every other food product grown on a farm or ranch - why not a federal or state-approved subsidy for inoculating cattle?

Response: Currently, USDA-APHIS does assist producers who operate in vicinity of the bison management areas with the costs for vaccination and testing.

Comment: Research should be focused on developing a more effective vaccine for cattle.

Response: Research to develop a more effective vaccine for cattle is outside of the scope of the EA.

## **Habitat**

Comment: The EA did not evaluate the establishment of a free-ranging bison population outside the boundary of Yellowstone National Park.

Response: The distribution of bison is defined by the IBMP. The decision to implement the IBMP was supported with a Federal and a State FEIS. The FEIS evaluated alternatives with bison distribution other than that defined by the IBMP. The FEIS also defined the term, free-ranging bison, as it applies to the IBMP. A decision to evaluate a bison distribution that differs from the distribution defined by the IBMP is outside the scope of the EA.

Comment: Most of the public lands north of Zone 2 on the West Side are already livestock free. Thus, hazing and capture operations both in and adjacent to the Park can be modified and limited by encouraging bison movements into the currently livestock free habitat in the Upper Gallatin watershed (both in and outside the Park) down to the Gallatin Wildlife Management Area near Big Sky.

Response: The IBMP includes the following language in the definition of bison distribution: "Bison also move into the Cabin Creek Recreation and Wildlife management area, the Lee Metcalf Wilderness or the upper Gallatin River, north of the West Yellowstone area. Cattle are not present on these areas and bison may use these areas during all seasons. However, management actions may be employed to prevent bison from either moving onto private lands or from crossing the Sage Creek-Wapiti Creek divide and moving near cattle allotments in the Taylor Fork." A decision to evaluate a bison distribution that differs from the distribution defined by the IBMP is outside the scope of the EA.

Comment: These lands are owned by the public and the government has no right to lease the lands when it is in detriment to wildlife.

Response: Implementation of the IBMP is consistent with the authorities of all cooperating agencies, as described in the FEIS. This includes the authority of the USDA Forest Service to manage grazing leases. Revising the provisions of those leases is outside the scope of the EA.

Comment: Habitat is the solution for brucellosis management/elimination in wildlife. Providing habitat buffers and corridors for native bison and elk, which allow animals to disperse to winter ranges rather than be confined in corrals and areas too small to accommodate their needs is a step in the right direction for eliminating the disease in these animals. If buffalo are managed as wildlife and the populations are allowed to disperse, brucellosis will naturally clear up. Compare the incidence of brucellosis in elk at Jackson with the incidence of brucellosis in the northern elk herd.

Response: The purchase of habitat for bison is beyond the scope of this EA. DOL understands that unnatural concentrations of elk and bison on artificial food sources on the National Elk Refuge contribute to the rate of brucellosis infection in those herds. DOL also understands that either unnatural concentrations or other circumstances that contribute to frequent exposure are necessary to maintain infection in an elk herd.

Bison ranging within the Yellowstone system are not fed and with the rare exception of the transboundary areas already naturally distribute themselves among suitable habitats. However, DOL is not aware of any information to support the suggestion that acquisition of additional habitats would cause reduced rates of exposure and infection among Yellowstone bison.

With habitat expansion, bison cows and calves would continue to move in groups. Susceptible bison would continue to be exposed to infected bison. The potential for free association between infected bison and susceptible cattle would significantly increase and the capability to manage for temporal and spatial separation of bison and cattle would significantly decrease.

Comment: Has there ever been a study on fencing the area the Bison escape from the park?

Response: The FEIS for the IBMP identified but did not evaluate a fencing alternative. The FEIS included an explanation for not analyzing the alternative in detail.

Comment: The Park does not provide bison with suitable winter forage and this problem must be addressed; their habitat must be increased.

Response: The purpose of the EA is to evaluate bison vaccination in the Western Boundary Area. The Federal FEIS for the IBMP analyzed eight alternatives, including a

minimal management alternative. If implemented, this alternative would have provided for the largest bison distribution, while still meeting all of the other objectives of the IBMP.

Comment: Montana should manage bison like they do at Henry Mountains, Utah.

Response: The bison herd in the Henry Mountains in southern Utah was established with bison that were transplanted from Yellowstone National Park. Initial management efforts for this herd focused on certifying the herd as brucellosis free. This was accomplished primarily through a process of capturing and testing bison, tagging the reactors with visible tags and using hunters to remove the marked bison. Currently, the herd is brucellosis free. The defined distribution is limited to an area that is almost entirely public land, managed by the Bureau of Land Management. These lands also are leased for cattle grazing. The population objective for this herd is 275 adult bison, post-season, with a bull/cow ratio of 50:100. Hunting permits are issued annually, based on that objective and population surveys that are conducted during the summer. Individual bison that move beyond the defined distribution are either returned to the bison management area or are removed by means other than public hunting. Managing the bison herd according to the Henry Mountains model would require two major changes to the IBMP, management to maintain the herd below an upper population objective and management activities throughout the defined distribution of bison to remove animals that exceed population objectives. Revisions to the IBMP are outside the scope of the EA.

Comment: Bison should be provided with artificial food inside YNP during the winter. This would keep them from wandering.

Response: The FEIS for the IBMP identified but did not evaluate a feeding alternative. The FEIS included an explanation for not analyzing the alternative in detail.

### **Authority**

Comment: Because neither APHIS nor Montana Department of Livestock personnel are trained in wildlife management, they have no right to meddle with the Yellowstone bison herd and erode its wildness.

Response: Authorities for bison management have been defined by state and federal statutes and are referenced in the various environmental documents and explained in the State and Federal FEIS for the IBMP. Successful implementation of the IBMP is dependant upon a commitment by all agencies to cooperate in the IBMP and is not a matter of how the authorities are divided among the agencies.

Comment: Why are bison classified as livestock and what is the reasoning behind hunting buffalo when they are classified as livestock? The first measure necessary for creating a hunting season for bison is to remove them from DOL's authority. Buffalo are wildlife and should be managed by Montana Fish, Wildlife and Parks.

Response: The allocation of management authority is the responsibility of the Montana Legislature and revising authorities is beyond the scope of this EA. DOL's authority for bison management is defined by state statutes and is referenced in the EA.

### **Public Hunting**

Comment: There are concerns about the safety to public health of the vaccine related to the 21-day slaughter withdrawal and the fact that RB51 is more persistent in bison than in cattle and the potential for hunters to harvest recent vaccinates.

Response: DOL anticipates little, if any, overlap between the likely timeframes for vaccination and public hunting. As noted in the EA, though unlikely, it is possible that hunters could harvest recent vaccinates. This effect could be minimized by advising hunters of the possibility of harvesting vaccinated calves and yearlings and encouraging them to only harvest an adult bison. Further, vaccinates will be marked and readily distinguishable from a distance.

Comment: The upcoming "hunts" for buffalo are completely unethical, or just as unethical as your senseless butchery of them. The bison herd should be allowed to roam free for years until a herd size can be created that would support a hunt. Yellowstone bison are exposed to millions of tourists each year and stand still allowing themselves to be photographed. Firing at a bison standing still at close range is completely unethical.

Response: The effects of bison hunting were analyzed in an EA that was prepared by Montana Fish, Wildlife and Parks.

### **Tourism**

Comment: One state I will not be visiting is Montana. I cannot justify spending money in a state that treats its wild animals or especially "Livestock" in the manner that Montana does. Your analysis should also detail the effect of this program on tourism revenue.

Response: The effects of bison management on tourism were analyzed in the FEIS for the IBMP.

### **Native Americans**

Comment: The EA fails to adequately address the proposal's impact on Native Americans, who have an age-old and complex relationship with buffalo. Many Native American individuals and organizations consider the buffalo as kin and believe that intrusive measures affect the sacredness of buffalo.

Response: The effects of bison management on cultural issues were analyzed in the FEIS for the IBMP.

### **Brucellosis in Other Species**

Comment: You also fail to consider the potential of re-infection of bison by elk.

Response: The EA indicated that management, under the provisions of the IBMP, will not achieve eradication of brucellosis from this bison herd and that vaccination of calves and yearlings in the Western Boundary Area is not intended to achieve eradication. The FEIS noted that brucellosis also occurs in other wildlife and throughout the greater Yellowstone area. The EA also noted that the prevalence of brucellosis in elk is one of the reasons that eradication of brucellosis in bison is not expected.

Comment: Wyoming & Idaho both have bison and cattle that graze over the same land, and yet I can't seem to recall any capture facility or sponsored killings of bison by either of these states.

Response: Limited cattle grazing occurs within Grand Teton National Park, and there have been some reports of commingled cattle and bison. Transmission from bison to cattle is a possibility and has not been ruled out as the source of infection in the infected cattle herds recently detected in that area. Further, Wyoming manages a bison-hunting season to help control bison numbers. Idaho has no tolerance for bison that migrate into the state from Yellowstone National Park.

Comment: Elk and other wildlife also carry brucellosis, yet there are no efforts to control brucellosis in other wildlife species. There has been evidence that elk have transmitted the disease to cattle, however there are no capture facilities or senseless slaughter of elk in your state.

Response: There is a high rate of brucellosis infection in elk that winter on the National Elk Refuge and on adjacent state-managed feed grounds in Wyoming. Transmissions from elk to cattle have been documented, both in Idaho and Wyoming. By comparison, very few of the elk are infected that migrate from the Yellowstone and Grand Teton National Parks to winter in Montana. The State of Montana maintains several wildlife management areas to provide elk winter range and manages special seasons to regulate numbers of elk and to reduce the potential for game damage caused by elk. There is a risk of brucellosis transmission from elk to cattle in Montana, but the risk is substantially less than the risk posed by bison.